

ECE 376 - Homework #7

Data Collection & Student t-Test - Due Monday, March 17th

Data Collection (population A)

1) Using the temperature sensor from homework set #6, record the temperature of something at steady-state:

- Refrigerator, freezer, glass of luke-warm water, outside temperature, etc. Your pick.
- Collect 50+ data points

Plot the resulting data vs. time.

2) From your data determine

- The mean,
- The standard deviation,
- The 90% confidence interval for the value of your next reading (individual)
- The 90% confidence interval for the actual temperature of whatever you're measuring (population)

Wait 5 minutes or more

Data Collection (population B)

3) Record another 50+ data points under the same conditions

Plot the resulting data vs. time

4) From your data determine

- The mean,
- The standard deviation,
- The 90% confidence interval for the value of your next reading (individual)
- The 90% confidence interval for the actual temperature of whatever you're measuring (population)

Comparison of Means Test (A vs. B)

5) Do a comparison of means test to determine the probability that

- The next measurement from A will have a higher value than the next measurement from B
- Population A has a higher mean than population B